REMARKS/ARGUMENTS

Claims 1 through 11 are pending in this application. The applicants have amended claims 1, 2, 4 through 8, and 10, support for which may be found at claim 2, as originally filed, and elsewhere within applicants' specification. Claim 11 has been cancelled without prejudice or disclaimer of subject matter. New claim 12 has been added.

The Examiner has objected to claim 4 due to the presence of certain informalities. The Examiner has objected to claims 6 through 10 under 37 CFR 1.75(c), as being presented in improper form. The Examiner has rejected claim 11 under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter regarded as his invention. The Examiner has rejected claim 11 under 35 U.S.C. 101 as being in improper process claim format. The Examiner has rejected claims 1 through 4 under 35 U.S.C. 103(a) as being unpatentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446. The Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446, in further view of Comer, EP Publication No. EP 0634,454 A1. The objection to and rejection of applicants' claims, as amended, is respectfully traversed. Reconsideration and favorable action is respectfully solicited in view of the following comments.

The Examiner has objected to claim 4 due to the presence of certain informalities. With regard to this objection, the Examiner notes that:

> Line 2 is awkward, and it appears that the word "is" should be deleted. Appropriate correction is required.

As may be seen, the applicants have amended claim 4 to address the issue raised by the Examiner. In view thereof, it is respectfully requested that the objection of claim 4 be removed.

The Examiner has objected to claims 6 through 10 under 37 CFR 1.75(c), for being presented in improper form. The Examiner is of the view that:

> Claims 6-10 [have been presented] ... in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-10 have not been further treated on the merits.

As may be seen, the applicants have amended claims 6 through 8 and 10 to address the issue raised by the Examiner. In view thereof, it is respectfully requested that the objection to claims 6 through 10 be removed.

The Examiner has rejected claim 11 under 35 U.S.C. 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter regarded as his invention. The Examiner is of the view that:

> Claim 11 provides for the use of propylene homo- or copolymer having strain hardening behavior, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

While not necessarily agreeing with the instant grounds for rejection, the applicants have cancelled claim 11, rendering the grounds for rejection moot. In view thereof, it is respectfully requested that the rejection of claim 11 under 35 U.S.C. 112, second paragraph, be removed.

The Examiner has rejected claim 11 under 35 U.S.C. 101 as being in improper process claim format. The Examiner is of the view that:

> Claim 11 [recites] ... a use, without setting forth any steps involved in the process, [and] results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner,* 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

While not necessarily agreeing with the instant grounds for rejection, the applicants have cancelled claim 11, rendering the grounds for rejection moot. In view thereof, it is respectfully requested that the rejection of claim 11 under 35 U.S.C. 101 be removed.

The Examiner has rejected claims 1 through 4 under 35 U.S.C. 103(a) as being unpatentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446. The Examiner is of the view that:

> Cogan teaches a coaxial cable comprising a dielectric layer that can be propylene homo- or copolymer, but is silent as to the propylene having strain hardening behavior.
>
> DeNicola discloses propylene having strain hardening behavior which can be used as wire and cable coating, wherein said propylene can be blended with other propylene homo or copolymer materials or ethylene homo- or copolymers, as required by claims 1 and 2. See entire document, and for example, column 9, lines 5-29.
>
> It would have been obvious to one having ordinary skill in the art to use as the dielectric layer of Cogan, a propylene homo or copolymer as taught by DeNicola with the reasonable expectation of success of obtaining a dielectric layer having a more uniform cell size when foamed. Regarding claims 3 and 4, it would have been obvious to the skilled artisan during routine experimentation to purify the propylene polymer to remove entrained catalyst. Accordingly, the limitations of present claims 3 and 4 are not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties of the resultant cable, whereby said properties are directly related to the claimed critical catalyst residue.

> Therefore, the combined teachings of Cogan and DeNicola would have rendered obvious the invention as claimed in present claims 1-4.

Cogan proposes a coaxial cable construction comprising (i) an inner electrical conductor comprising a single electrical conductor or a core of two or more electrical conductors; (ii) dielectric insulation comprising an inert gas and a solid, said solid comprising (a) a polymer selected from the group consisting of polyethylene, polypropylene, fluoropolymers, and mixtures of two or more of said polymers and (b) an alkylhydroxyphenylalkanoyl hydrazine; and (iii) an outer electrical conductor. Among the deficiencies that exist with respect to the Cogan document, the Examiner correctly notes, Cogan is silent as to the propylene having strain hardening behavior.

DeNicola proposes a method of treating a free-radical-containing, optionally room-temperature-aged, irradiated, normally solid high-molecular-weight, semi-crystalline propylene polymer material at about from 40° C to 110° C for at least about 10 minutes before being exposed to the higher temperatures that deactivate the residual free radicals therein. Treatment of the polymer at the intermediate temperature is said to cause recombination, and better utilization, of free radicals with the production of more long-chain branching. A two-stage fluid bed process, with a first stage at the intermediate temperature for radical recombination and a second radical-deactivation stage at a higher temperature, is said to be preferred.

Comparing the relied upon documents to applicants' claimed invention reveals that nowhere is applicants' coaxial or triaxial cable comprising a dielectric layer which comprises as a component (A) a propylene homo- or copolymer having strain hardening behavior with a haul-off force Fmax > 5cN and a draw-down velocity vmax > 150 mm/s, fairly taught or suggested by the relied upon documents. Moreover, nowhere is applicants' method for producing a dielectric

layer of a coaxial or triaxial cable, as claimed in new claim 12, fairly taught or suggested by the relied upon references.

Cogan suggests a coaxial cable construction and particularly a dielectric insulation layer, which is thermally stable over long periods of time and has a low dissipation factor (page 2, paragraph [006]). Furthermore, the coaxial cable of Cogan has a low signal loss at high frequency (page 3, paragraph [009]). The dielectric insulation layer comprises polypropylene, which can be a homopolymer or a copolymer of propylene and ethylene, 1-butene, 1-hexene etc. The density of the polypropylene can be in a range of 0.870 to about 0.915 gram/cm^3 and the melt flow rate can be in a range of about 0.5 to about 20 dg/min (page 5, [0022]).

However, due to the high degree of expansion typically used, it is required for high frequency RF communications that the polymeric material used for the dielectric layer possess superior mechanical properties for the melt upon expansion to obtain closed and even cell structures. Therefore, the dielectric layer of the present coaxial and triaxial cable comprises a propylene homo- or copolymer, which has a haul-off force of Fnm_n > 5cN and a draw-down velocity of v_{nn} > 150 mm/s. Hence, this propylene polymer has a strain hardening behavior, and the cable shows good mechanical and electrical properties.

Cogan proposes a polypropylene, which can be a homo- or copolymer of propylene and ethylene, 1-butene, 1-hexene, 4-methyl-1 - pentene or 1-octene as a specific density in a range of 0.87 to about 0.15 g/cm^3 and a melt flow rate in a range of about 5 to about 20 dg/min (page 5, paragraph [0022j).

In stark contrast to the present invention, Cogan does not suggest a polypropylene or its use, with the specific range of haul-off force and draw-down

velocity, as required by claims 1 or 12. Furthermore, a person skilled in the art cannot find any evidence that this specific strain hardening behavior of the polypropylene will lead to improved electrical properties.

The specification of the present application demonstrates in Table 1 on page 13 in combination with Fig. 4 that a dielectric layer comprising a polypropylene with strain hardening behavior leads to improved electric properties over a dielectric layer comprising a polypropylene with no strain hardening behavior. This can be seen by comparing the data in the first and second line of Table 1 following the header "examples according to the invention". There, it can clearly be seen that the use of MPP which, as can be inferred from Fig. 4, has strain-hardening behavior (as required by claims 1 and 12), shows a superior dissipation factor over clean-PP (having no strain hardening behavior), while retaining about the same relative permittivity.

DeNicola describes an irradiation process to introduce long-chain branching into an essentially linear polypropylene. Such long chain branched polypropylene have strain-hardening elongational viscosity (col. 3/1. 23 et. seq.). Thus, DeNicola suggests polypropylenes which have better strain hardening behavior than commercial polypropylenes.

However, DeNicola only mentions wire and cable applications in a long list of more than ten possible fields of application. DeNicola does not suggest that a strain hardening behavior of a polypropylene, when it is used for the production of coaxial or triaxial cables, leads to good electric and mechanic properties of the cables. Moreover, in the present invention the strain hardening behavior is defined by a haul-off force of $F > 5cN$ and a draw-down velocity of $v > 150$ mm/s.

DeNicola merely mentions that the polypropylene has a good strain hardening behavior, but does not specify the range of the haul-off force and draw-down velocity, which is essential to obtain the coaxial or triaxial cables of the present invention. Consequently, a person skilled in the art would have no reason to combine the teaching of DeNicola with the teaching of Cogan in order to obtain the invention of the present application.

In view thereof, it is respectfully requested that the grounds for rejection of claims 1 through 4 under 35 U.S.C. 103(a) as being unpatentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446, be removed. Moreover, it is respectfully submitted that, for at least the reasons outlined above, claims 6-10, which depend from claim 1, and new claim 12, are patentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446.

The Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446, in further view of Comer, EP Publication No. EP 0634,454 A1. The Examiner is of the view that:

> Cogan and DeNicola are as set forth above. Though DeNicola teaches that his propylene can be mixed with other propylene or ethylene homo or copolymers, he is silent as to the specific amounts. Comer teaches a polyolefin composition comprising a propylene polymer having strain hardening behavior present in an amount of from 5 to 95% by weight and a non-strain hardening behavior propylene polymer present in an amount of from 95 to 5% by weight having improved thermoformability. Comer teaches that compositions containing strain hardening behavior propylene and at least 50 wt% of a non-strain hardening behavior propylene are known in the art. It would have been obvious to one having ordinary skill in the art to form a blend of a strain hardening propylene and a non-strain hardening propylene as taught by DeNicola, wherein the non-strain hardening propylene is present in an amount of at least 50 wt% as taught by

Comer to achieve the predictable results of obtaining a polymer having good mechanical properties and thermoformability.

Therefore, the combined teachings of Cogan, DeNicola, and Comer would have rendered obvious the invention as claimed in present claim 5.

As indicated above, Cogan proposes a coaxial cable construction comprising (i) an inner electrical conductor comprising a single electrical conductor or a core of two or more electrical conductors; (ii) dielectric insulation comprising an inert gas and a solid, said solid comprising (a) a polymer selected from the group consisting of polyethylene, polypropylene, fluoropolymers, and mixtures of two or more of said polymers and (b) an alkylhydroxyphenylalkanoyl hydrazine; and (iii) an outer electrical conductor.

DeNicola proposes a method of treating a free-radical-containing, optionally room-temperature-aged, irradiated, normally solid high-molecular-weight, semi-crystalline propylene polymer material at about from 40° C to 110° C for at least about 10 minutes before being exposed to the higher temperatures that deactivate the residual free radicals therein. Treatment of the polymer at the intermediate temperature is said to cause recombination, and better utilization, of free radicals with the production of more long-chain branching. A two-stage fluid bed process, with a first stage at the intermediate temperature for radical recombination and a second radical-deactivation stage at a higher temperature, is said to be preferred.

Comer proposes a polyolefin composition comprising (A) an irradiated, normally solid, high molecular weight, amorphous to predominantly crystalline olefin polymer material and (B) a non-irradiated propylene polymer material or a mixture thereof with an olefin copolymer rubber. The polyolefin composition is said to provide improved retention of embossing definition (grain retention), when the

composition is extruded and embossed, with or without subsequently thermoforming.

As may be appreciated, a similar analysis applies to Comer with the exception that Comer does even not mention wire and cable applications. Only fibers, films, sheets and other shaped articles are mentioned (p. 2/l. 6). Consequently, a person skilled has no reason to combine the teaching of Comer with the teaching of Cogan and/or DeNicola in order to obtain the invention of the present application.

It is respectfully submitted that, as the Federal Circuit noted in In re Gordon, at 221 USPQ 1127, 733 F.2d 902, "the mere fact that the reference could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." It is respectfully submitted that the lack of technical motivation for making the modifications necessary to arrive at applicants' claimed invention is evidence that the suggestion for the modification could not have come from the references themselves.

In view thereof, it is respectfully requested that the grounds for rejection of claim 5 under 35 U.S.C. 103(a) as being unpatentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446, in further view of Comer, EP Publication No. EP 0634,454 A1, be removed. Moreover, it is respectfully submitted that, for at least the reasons outlined above, claims 6-10, which depend from claim 1, and new claim 12, are patentable over Cogan, EP Publication No. EP 0961,295 A1, in view of DeNicola, Jr., U.S. Patent No. 5,047,446, in further view of Comer, EP Publication No. EP 0634,454 A1.

The references cited by the Examiner as being of interest have been reviewed and found not to be pertinent to the issue of the patentability of the instant claims.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Account No. 50-2478 (12466).

In view of the foregoing, it is respectfully submitted that the present claims are in condition for allowance. Prompt notification of allowance is respectfully solicited.

Respectfully submitted,

Date: July 9, 2008

Michael J. Mlotkowski
Attorney for Applicants
Registration No. 33,020
(703) 584-3270

POST OFFICE ADDRESS to which correspondence is to be sent:

Roberts, Mlotkowski & Hobbes
P.O. Box 10644
McLean, VA 22102